Summary report of stock use and grazing in wilderness meadows Sequoia and Kings Canyon National Parks, 2011

Summary

- May snowpack measurements ranged from 144% to 164% of average. This resulted in 2011 being categorized as a **"Wet"** year for purposes of setting preliminary opening dates in the Kaweah drainage and as a "**Normal**" year in the Kings and Kern drainages.
- A late-lying snowpack and persistent wet conditions, however, resulted in meadow grazing being delayed until the 'wet' year dates or later for all but a few meadows in the two parks. Snowy conditions delayed or prevented stock access entirely to some areas
- Reported administrative, commercial, and private stock use during the summer of 2011 totaled **5438 stock nights**, or 6745 animal unit nights. This represents a decrease of 24% compared to 2010, which had a total of 7162 stock nights reported. 2011 had the third lowest reported use on record; only the years 1998 and 1995 had fewer stock nights.
- Administrative and commercial users continue to account for the majority of pack stock use in the two parks, accounting for 50% and 42%, respectively, of reported use. Private users accounted for the remaining 8%.
- Relative to 2010, administrative use decreased by 22%, commercial use decreased by 26%, while reported private use decreased by 25%.
- Overall reported use of supplemental feed increased by 55%, from 814 nights in 2010 to 1264 nights in 2011. This was the largest reported use of supplemental feed on record. Administrative use of supplemental feed increased by 43%, commercial use increased by 62%, and private use increased by 75%.

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Introduction

This document provides the 2011 annual summary of reported administrative and recreational saddle and pack stock use of the wilderness and backcountry meadows of Sequoia and Kings Canyon National Parks (SEKI). This information is collected via reporting forms that are distributed to commercial, private, and administrative stock users, and from the wilderness permit database. All stock users at SEKI are required to provide the information requested on these forms after each trip.

Data on stock use of the wilderness meadows of SEKI has been collected in one form or another for over fifty years. In 1986, a standardized approach with accompanying computer database was initiated, and this method, although modified, is still in use today. From this database, yearly summary statistics are prepared and presented in tabular and graph form, and comparison with past years use is presented.

Methods

Moisture category. According to the amount of moisture in the snowpack at survey sites within the parks, we categorize each year as one of the following:

1) **Dry** less than 50% of average precipitation
2) **Normal** 50% to 150% of average precipitation
3) **Wet** more than 150% of average precipitation

The snowpack is the best indicator we have of the amount of moisture the meadows received. Meadow grazing opening dates for a particular season are adjusted based on snowpack during the preceding winter. Tables and figures include a letter next to the year to indicate whether it was a dry, normal, or wet year ("D", "N", or "W, respectively).

Types of use. Use is divided into three categories: administrative, commercial, and private. Administrative users are those that are employed by the National Park Service (NPS) and who use pack stock in order to carry out their official duties. Commercial users are people or companies that pack in stock as a paid service. Companies or individuals of this type are required to hold a NPS issued Commercial Use Authorization (CUA) or be a licensed in-park concession. Private use is packing and riding done by an individual or with his or her friends or family. Only a standard wilderness permit is required for this type of use.

Administrative grazing in the Ash Mountain pasture, which is non-wilderness, is not included in this report. Up to 90 horses and mules may be grazing at Ash Mountain at any one time. Historically, grazing in these pastures has ranged from approximately 300 to 700 AUMs or 8,000 to 21,000 animal unit nights per year. In most years, most of the park stock spend the winter (November to late April) at the Pixley Wildlife Refuge in the San Joaquin Valley, returning to the Ash Mountain pasture in spring.

Reporting. Each spring, all commercial and administrative stock users of the wilderness at SEKI are provided forms to document their trips. Private stock users are given a "Stock Use Card" along with the issuance of their wilderness permit. Copies of the reporting cards are in Appendix 1. All stock users are required to respond to the information requested on these forms, which includes:

1) Name of packer
2) Date of trip
3) Packer classification (commercial, administrative, or private)
4) Type of stock used
5) Number of stock
6) Number of people
7) Name and location of forage areas where stock grazed
8) Number of nights spent in each forage area
9) Name of party on wilderness permit

After each trip these forms are completed and returned to the meadow monitoring specialist at SEKI and the information is then entered into a database. Starting in 2007, all commercial users were required to submit monthly reports, instead of a final summary report at the end of October; these include not only overnight use, but day use as well.

Units of measurement. Prior to 1998 there was some confusion over the terminology used to calculate use levels presented in the annual stock use report. It appears the term stock night was used interchangeably with animal unit night, and it was not always clear which unit was being referred to. The following definitions are intended to help clarify these terms and to set the stage for the data that follow in the rest of the report.

Conventionally, an overnight stay by a pack animal is defined in terms of a common currency, the *animal unit night*. An *animal unit* is equal to approximately 1,000 pounds of grazing animal; an animal unit night refers to an overnight stay by that animal. In range management almost everything is compared to cows, which at approximately 1,000 pounds are rated at 1.00 animal unit night. According to this system, an overnight stay by a horse or mule is defined as 1.25 animal unit nights. An overnight stay by a burro is 0.50 of an animal unit night, and a llama is 0.35 of an animal unit night. The use of animal unit nights reflects the variation in forage consumed by these different sized animals, and allows for comparison with other grazing systems. An adult horse consumes approximately 25% more forage than an adult cow in a 24 hour period; a llama consumes 35% of that of a cow, and a burro about 50%. Thirty animal unit nights are equal to one *animal unit month* (AUM) which is the amount of dry forage required by one animal unit for one month based on a standardized forage allowance of 26 pounds per day. The use of these standardized units allows range managers to compare use across systems and to establish grazing capacities based on the varying consumption of forage by different types of animal.

For the purposes of this report, and to make the data accessible to all users, a *stock night* represents an overnight stay by any pack animal, whether or not the animal grazed or was fed supplemental feed, and without reference to the more conventional animal unit night. A grazing night is an overnight stay that includes grazing. In order to facilitate comparison between years, the statistics that follow are reported in stock nights and/or grazing nights. Where the data allow, summary figures are reported in both animal unit and stock nights. When referring to earlier reports, note that there may be discrepancies in the numbers reported due to use of different terminology. Discussions of grazing capacity, as in the annual Residual Biomass Monitoring Report, always rely on the more conventional animal unit night.

The following data reflects overnight visits by stock only; they do not include stock use from day trips, or spot and drop trips which were completed in one day.

Data availability. Information from years 1955-1984 is available upon request; data for years prior to 1955 likely exists but has yet to be located and summarized. Data from the period 1985 to the present are the most accurate. As new information arises it is incorporated into subsequent reports. It is important to note that these reflect *reported* use; due to inconsistencies in reporting, these may be quite different from actual use, especially during earlier years.

In 2010, all of the yearly stock use databases from 1985 through 2009 were integrated into a single database and screened for errors as part of the Natural Resource Condition Assessment. Inconsistencies between the 2010 and 2011 Stock Use Reports and previous reports may be due to corrections to the data during this process.

Results

Moisture. May snowpack measurements ranged from 144% to 164% of average. This resulted in 2011 being categorized as a "wet" year for purposes of setting preliminary opening dates in the Kaweah drainage and as a "normal" year in the Kings and Kern drainages. Due to the extensive snow cover still present at the end of May, a special bulletin was distributed advising stock users that while technically a "normal" snow year in the Kings and Kern drainages, that "wet" year opening dates would be adopted until staff could evaluate moisture conditions on the ground.

Meadow opening dates were posted to the wilderness conditions website, with changes posted by the wilderness office as information was received from the field. Changes to the "wet" year opening dates were made for 81 areas, some of which included multiple meadows. Of these, 5 were opened to grazing one week earlier than the wet year date. Delays to grazing opening beyond the wet year date were made for 76 areas. Delays ranged from 4 to 41 days, with an average of 16 days.

User compliance. 2011 continued to show improvement in compliance with the monthly reporting requirement for commercial and administrative users. The concessions office was effective in compelling most commercial users to submit their monthly reports on time, and also in organizing and distributing the reports electronically.

Of the 21 documented overnight trips made by private parties during 2011, only 5 users returned reporting cards at the end of the season. The remaining trips were documented using the wilderness permit database and staff observation logs, with follow up calls made to a subset to clarify specific grazing locations. Where this was not possible, the grazing nights were attributed to the travel zone in general rather than a specific meadow, so that they would contribute to the total grazing nights for an area and the parks as a whole.

Total use. Reported recreational and administrative stock use during the summer of 2011 totaled 5438 stock nights, or 6745 animal unit nights (Table 1). This represents a decrease of 24% compared to 2010, which had a total of 7162 stock nights reported. Administrative use accounted for 50% of all overnight stock use, commercial use contributed 42%, and private use 8%. Reported use of stock at Sequoia and Kings Canyon National Parks from 1985 to the present is listed in tabular form in Appendix 2, and use from 1995-2011 is illustrated graphically in Figure 1.

Table 1: Proportional types of stock use in 2011.

Use type	%	Stock Nights	Animal Unit Nights	Animal Unit Months
Administrative	50%	2706	3383	113
Commercial	42%	2310	2888	96
Private	8%	422	475	16
Total	**100%**	**5438**	**6745**	**225**

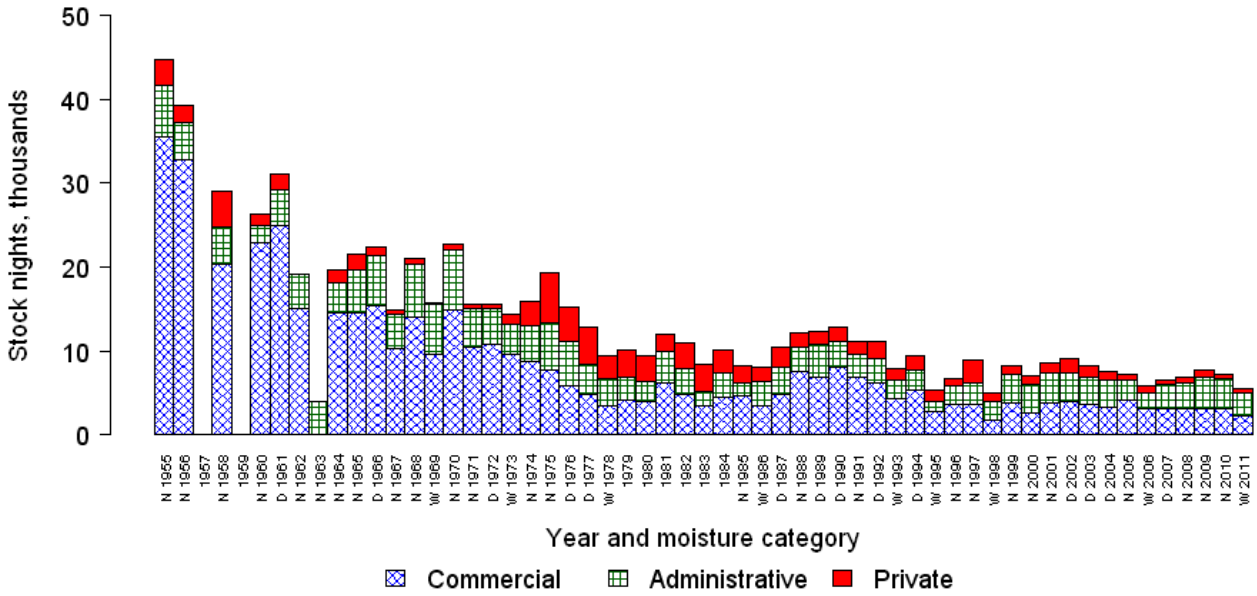

Figure 1: Reported stock nights in wilderness meadows of Sequoia and Kings Canyon National Parks, 1955-2011. Note that use data are missing or incomplete for the years 1957, 1959, and 1963, and moisture conditions are missing for 1979-1984.

Administrative use. Reported administrative use decreased by 22% over the previous year. A breakdown of use by work group is presented in Table 2 and Figure 2.

Sequoia District trail crews accounted for the greatest amount of administrative stock use, followed by the Kings District trail crews. Both trail crews had fewer stock nights in 2011 than in 2010; use by Sequoia trail crews decreased by 23% while use by Kings trail crews decreased by 16%. Reported stock use by ranger staff decreased by 28%, from 511 nights in 2010 to 369 nights in 2011.

Note that 364 of the commercial stock nights reported in 2011 were attributed to administrative functions such as supplying NPS trail or resource crews and evacuating sick or injured visitors.

Table 2: Administrative use by work group 2007-2011. This includes all reported use by National Park Service personnel in wilderness meadows, shown as Grazing Nights (Additional Nights of Supplemental feed)|Total stock nights. It does not include grazing in the Ash Mountain pastures.

Packer	2011 N/W	2010 N	2009 N	2008 N/D	2007 D
Hockett Ranger	43	152(10)|162	283	199	57
Kern Ranger					24
Kings Frontcountry Rangers					9
Kings Trail Crew	562(46)|608	670(56)|726	761(114)|875	536(106)|642	766(75)|841
Military Overflight Trip		20.5(51)|71.5	38(38)|76	68	64(8)|72
Other Administrative	35(12)|47		52		55(11)|66
Roaring River Ranger	247(40)|287	311(13)|324	300(56)|356	308(30)|338	254(20)|274
Sequoia Frontcounty Rangers	34(5)|39	25			
Sequoia Trail Crews	1455(227)|1682	2072(101)|2173	1885(146)|2031	1834(51)|1885	1389(29)|1418
Total	**2376(330)|2706**	**3251(231)|3482**	**3319(354)|3673**	**2945(187)|3132**	**2618(143)|2761**

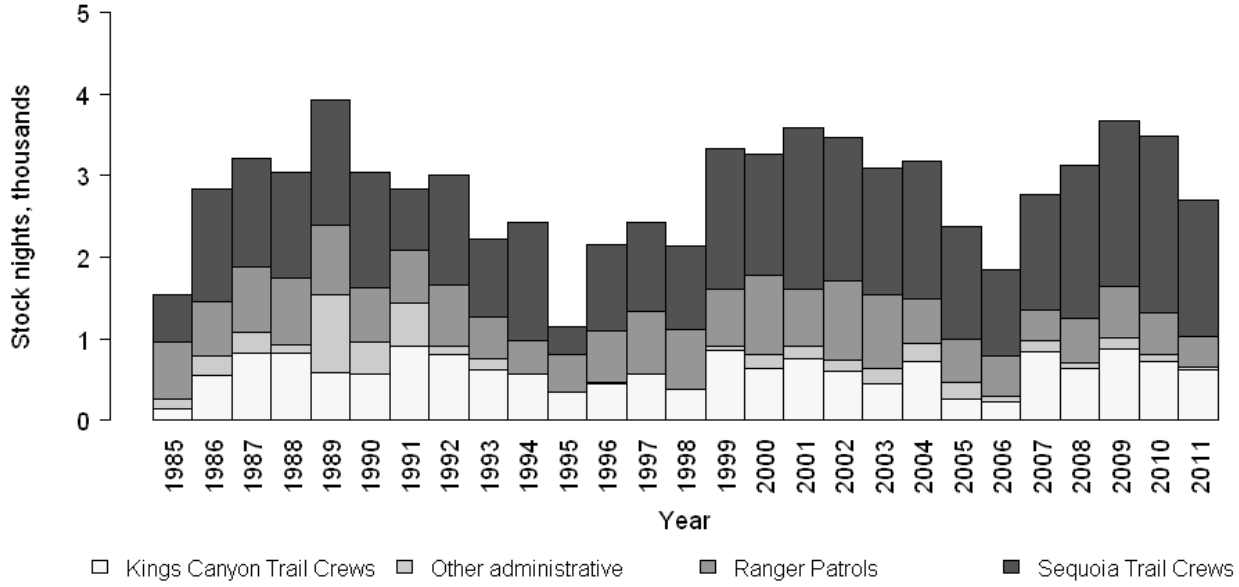

Figure 2: Administrative stock use by work group, 1985-2011.

Commercial use. 14 commercial pack operations were authorized to operate in the park in 2011: 13 Commercial Use Authorizations (CUA) and 1 concession contract. Overnight use was reported for 10 commercial users, with two commercial users reporting only day trips (Table 3). A total of 2296 stock nights were reported among all users, a decrease of 26% relative to 2010.

Two permitted commercial users (Reds Meadow and Three-Corner-Round) had no reported use in the two parks, while two other commercial users (Golden Trout and Lost Valley) had only day use in the parks. Six commercial users (Clyde Pack Outfitters, Cottonwood Pack Station, Horse Corral Pack Station, Rainbow Pack Outfitters, and Sequoia-Kings Pack Trains) reported increases in overnight use in 2011 relative to 2010. The most notable increase was from 172 nights in 2010 to 405 nights in 2011 reported by Horse Corral Pack Station. Six outfitters (Balch Park Pack Station, Bishop Pack Outfitters, Cedar Grove Pack Station, High Sierra Pack

Station, Rock Creek Pack Station, Three-Corner-Round) had decreases in overnight use in 2011. The largest decrease in reported use came from Rock Creek Pack Station, which reported 667 nights in 2011, a decrease of 53% over the 1424 nights reported in 2010. Use for each commercial user from 1985 to 2011 is illustrated in Figure 3.

Of these commercial stock nights, 364 were attributed to administrative functions such as supplying NPS trail or resource crews and evacuating sick or injured visitors. This represents 16% of all reported commercial use in 2011 and an increase over the 15 year average of 106 stock nights. The NPS contracted Rainbow Pack station to bring construction materials into the LeConte ranger station which accounted for 192 of these stock nights.

Table 3: Overnight commercial use 2007-2011, shown as grazing nights (additional nights of supplemental feed)|Total stock nights. Packers reporting no overnight use for three consecutive years are not included.

Packer	2011 N/W	2010 N	2009 N	2008 N/D	2007 D
Balch Park PS	114(23)|137	122(36)|158	116(144)|260	250	135(60)|195
Bishop PO		50(12)|62	56	200	194
Cedar Grove PS	259(64)|323	337(53)|390	367(48)|415	271(173)|444	658(12)|670
Clyde PO	19	11	0(56)|56	12	12
Cottonwood PS	99(215)|314	108(181)|289	98(120)|218	72(108)|180	123(79)|202
Frontier Pack Train			112	300	52(13)|65
High Sierra PS	75	102(29)|131	144	184(11)|195	299
Horse Corral PS	352(53)|405	159(13)|172	702(66)|768	378	145(2)|147
Muir Trail Ranch	0(6)|6		32		
Rainbow PO	61(197)|258	164(3)|167	128	85	134(4)|138
Rock Creek PS	313(354)|667	1216(208)|1424	606	688	577(48)|625
Sequoia-Kings PT	106	89	121	67(10)|77	135(21)|156
Three-Corner-Round PO		196(28)|224	204(6)|210	210	438(30)|468
Total	**1398(912)|2310**	**2554(563)|3117**	**2686(440)|3126**	**2769(321)|3090**	**2902(269)|3171**

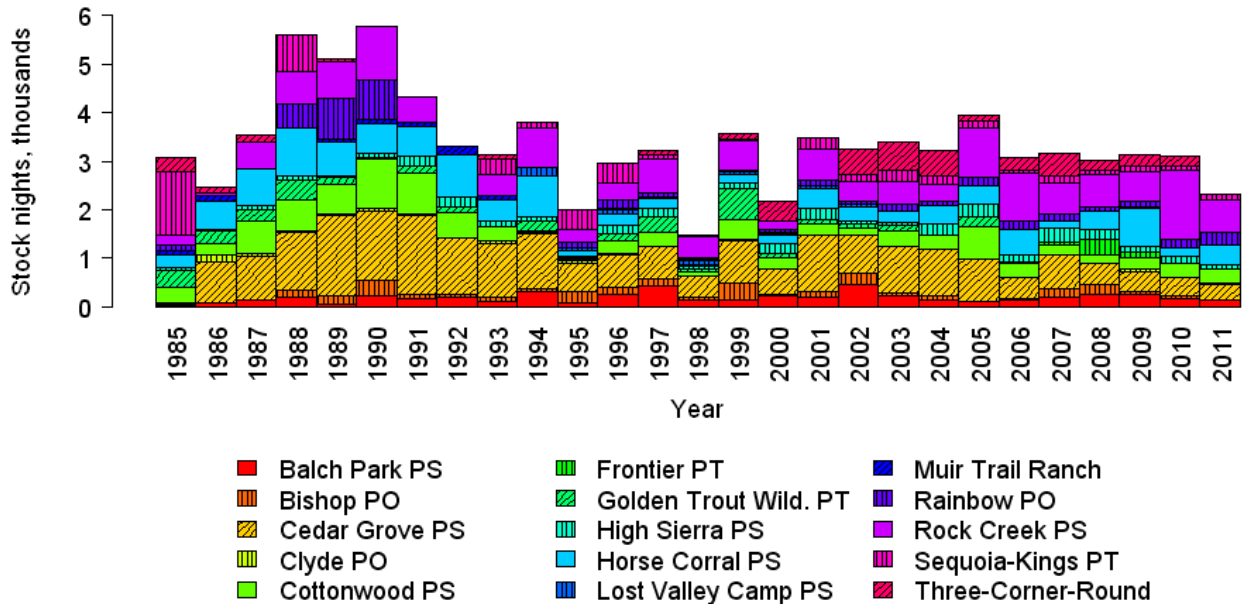

Figure 3: Commercial use by outfitter, 1985-2011. Outfitters with no reported use from 2009-2011 removed.

Private use. Reported private use decreased from 563 nights in 2010 to 422 nights in 2011, a reduction of 25%. There were 21 trips documented from self reporting cards, USFS and NPS permits, and ranger observation logs.

Supplemental feed. Overall use of supplemental feed in lieu of grazing increased by 57%, from 814 nights in 2010 to 1277 nights in 2011 (Figure 4). Administrative use of supplemental feed increased by 43%, while commercial use increased by 62% and private use increased by 75%. The biggest commercial users of supplemental feed were the Rock Creek, Cottonwood, and Rainbow Pack Stations, with 354, 215, and 197 nights, respectively. Most commercially supported administrative use (237 of the 364 nights) relied on supplemental feed. Supplemental feed was used for all Rainbow Pack Station trips bringing construction materials into the LeConte ranger station under contract to the NPS; this contributed 192 nights of supplemental feed.

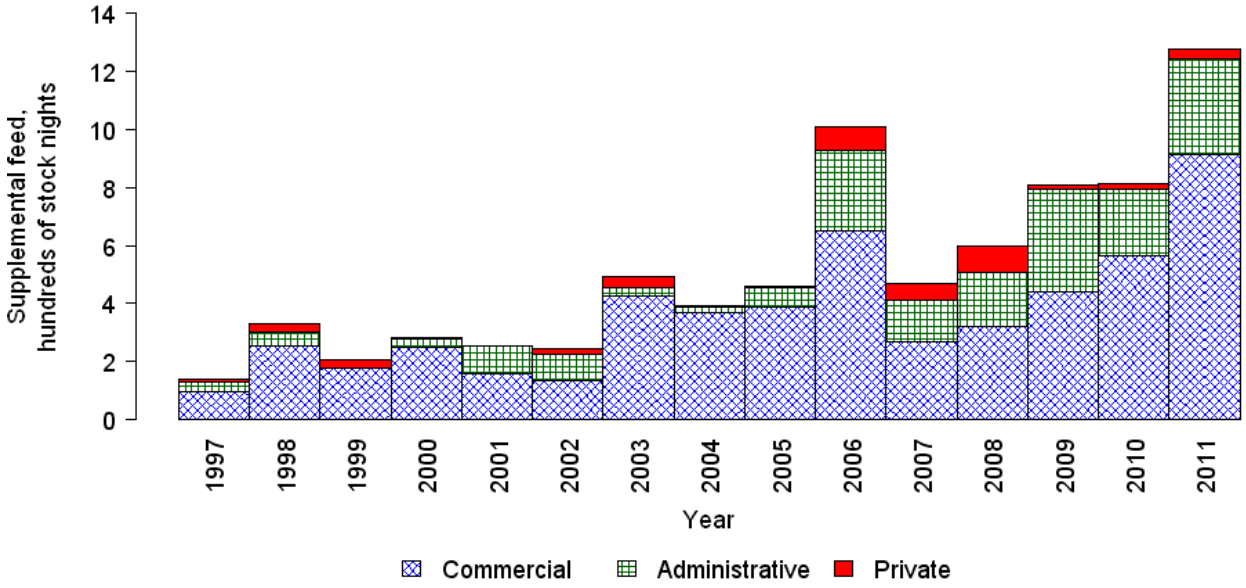

Figure 4: Reported use (stock nights) of supplemental feed by user group 1997- 2011.

Timing of use. In 2011, 93% of use occurred in the months of July, August, and September. August was the month with the greatest amount of use (Table 4). The percentage of use in September was higher than average, while June and July were lower.

The first stock trips over Kearsarge and Bishop Passes were in the second week of August, while trips over Cottonwood Pass began the third week in July. The first crossings of Glen and Forester Pass didn't occur until the end of August, and no parties with horses and mules reported crossing Muir Pass in 2011.

Table 4: Monthly Use and Percentage of Entire Season, 1997-2011.

	January-May		June		July		August		September		October-December	
Year, moisture	Nights	%	Nights	%	Nights	%	Nights	%	Nights	%	Nights	%
2011 N/W	0	0.0%	355	6.5%	1251	23.0%	2169	39.9%	1653	30.4%	10	0.2%
2010 N	0	0%	334	4.7%	1765	24.6%	3504	48.9%	1478	20.6%	81	1.1%
2009 N	0	0%	898	11.7%	2015	26.2%	2953	38.5%	1756	22.9%	58	0.8%
2008 N/D	0	0%	865	12.6%	2066	30.1%	2581	37.6%	1247	18.2%	98	1.4%
2007 D	0	0%	597	9.3%	2119	33.0%	2483	38.6%	1175	18.3%	54	0.8%
2006 W	0	0%	331	5.6%	1223	20.9%	3025	51.6%	1260	21.5%	26	0.4%
2005 N	0	0%	252	3.5%	1604	22.4%	3528	49.3%	1697	23.7%	74	1.0%
2004 D	0	0%	594	7.9%	2471	33.0%	3057	40.8%	1330	17.8%	40	0.5%
2003 N/D	0	0%	424	5.2%	2603	31.7%	3348	40.7%	1634	19.9%	209	2.5%
2002 N/D	0	0%	861	9.5%	3058	33.9%	3082	34.2%	1879	20.8%	141	1.6%
2001 N	6	0.1%	536	6.3%	2320	27.3%	3885	45.7%	1463	17.2%	289	3.4%
2000 N	0	0%	1134	16.3%	2005	28.8%	2492	35.7%	1240	17.8%	100	1.4%
1999 N	0	0%	663	8.1%	2193	26.9%	3522	43.2%	1563	19.2%	204	2.5%
1998 W	0	0%	67	1.4%	508	10.5%	2762	57.0%	1439	29.7%	70	1.4%
1997 N	10	0.1%	574	7.0%	2012	24.5%	3684	44.8%	1677	20.4%	267	3.2%
Mean	**1**	**0%**	**566**	**7.7%**	**1947**	**26.4%**	**3072**	**43.1%**	**1497**	**21.2%**	**115**	**1.5%**

Number of areas receiving use. The number of areas used may be used as an indication of the dispersion of stock use. Variation in the number of areas used, however, may also reflect differences in reporting. Use was reported for a total of 96 forage areas in 2011, more than in 2010, but fewer than the 15-year average of 104 areas (Table 5). Administrative users reported use in 48 areas; commercial users reported use in 53 areas, and private parties in 30 areas. A list showing the number of commercial, private, and administrative stock nights for each forage area is presented in Appendix 3.

Table 5: Number of forage areas used by user group, 1997-2011.

Year & Moisture	Administrative	Commercial	Private	Overall
2011 N/W	48	53	30	96
2010 N	45	64	35	94
2009 N	43	75	39	106
2008 N/D	45	70	37	110
2007 D	43	60	40	94
2006 W	36	60	38	90
2005 N	39	75	26	100
2004 D	47	72	49	111
2003 N/D	47	65	60	113
2002 N/D	48	75	60	113
2001 N	44	76	49	114
2000 N	51	73	54	113
1999 N	43	62	31	88
1998 W	35	52	41	92
1997 N	41	72	90	133
Mean	**44**	**67**	**45**	**104**

Areas of high use. Based on reported stock nights, the following forage areas received the most use in 2011. Until the system of estimating carrying capacity of these meadows is further developed and refined, use will be defined solely on the absolute amount of use an area receives. Note that forage areas differ in their ability to withstand use and thus may receive high use but not be overgrazed. These meadows should, however, be watched closely for signs of unacceptable impacts.

The twenty five forage areas that received the highest use overall (by all user groups combined) are shown in Table 6. The ten areas most used (total number of stock nights) in 2011 by each user group (administrative, commercial, and private) are presented in Tables 7, 8, and 9 which follow. Note that these numbers include grazing nights, nights where supplemental feed was provided, and total stock nights, and therefore represent overall stock use, not just grazing.

Table 6: Grazing and total stock nights in the 25 most used areas in 2011 for commercial, private and administrative use combined. Previous use included for reference. Shown as: grazing nights (nights supplemental feed)|total stock nights.

Area	2011 N/W	2010 N	2009 N/D	2008 D	2007 W
69-5.1 Scaffold Mdw Tourist	436(12)|448	336(8)|344	400	280(10)|290	272(5)|277
84-2 Lower Rock Ck Xing Mdw	31(245)|276	266(109)|375	307(96)|403	220(42)|262	92(59)|151
79-1 Cold Springs Camp Area	268	84	212	156	178
86-7 Lewis Camp Large Pasture	260	224	194	115	191
86-1 Kern Bridge Camp	236	544(4)|548	493	272(3)|275	183
77-5 Redwood Mdw	12(211)|223	0(93)|93	50(146)|196	112(51)|163	93(28)|121
71-1 Austin Camp Mdws	214(6)|220	45	34	21	
42-1 Dusy Creek	19(188)|207	28	3	12	
83-5 Lower Crabtree Mdws	57(137)|194	66(20)|86		0(5)|5	84(9)|93
83-8 Sandy Mdw	182	347	241	344	51
58-2 Woods Creek Crossing	147(6)|153	138(6)|144	9	66(19)|85	107(18)|125
86-2 Upper Funston Mdw	130	44	69	54	87(6)|93
83-7 Lower Whitney Creek	121	30(29)|59	45	12	
89-3 Lower Lost Canyon Mdws	117	127	139	135	153
69-5.2 Grasshopper Mdw	110				
80-3 Tyndall Creek Mdws	108	78	76	88	167
90-9 Lower South Fork Mdw	108	86(36)|122	96(60)|156	45(78)|123	12
65-4 Upper Bubbs Creek	68(23)|91	110	226(44)|270	59	233
72-8 Sugarloaf Mdw	84(5)|89	53	70	68(5)|73	105
38-2 Blue Canyon Mdw	88	11	0(28)|28		30
90-13 Slim's Mdw	83	45	126	113	
39-8 Deer Mdw	79(3)|82	69	23	26	6
66-3 Junction Mdw (Bubbs)	72(9)|81	55(40)|95	78(36)|114	41(47)|88	63(11)|74
89-2 Upper Lost Canyon	76				
87-4 Lower Big Arroyo	72	91	65		

Table 7: Administrative grazing and stock nights in the ten areas receiving the most administrative use in 2011. Previous use included for reference. Shown as: grazing nights (nights supplemental feed)|total stock nights.

Area	2011 N/W	2010 N	2009 N/D	2008 D	2007 W
69-5.1 Scaffold Mdw Tourist Past.	358	290	245	195	224(5)|229
86-7 Lewis Camp Large Pasture	260	210	194	115	191
86-1 Kern Bridge Camp	228	534	481	272	183
77-5 Redwood Meadow	12(211)|223	0(87)|87	44(146)|190	112(51)|163	93(28)|121
83-8 Sandy Meadow	182	131	124	224	40
79-1 Cold Springs Camp Area	168	84	169	156	178
89-3 Lower Lost Canyon Mdws	117	127	101	135	153
38-2 Blue Canyon Meadow	84	0	0	0	18
80-3 Tyndall Creek Meadows	84	14	0	26	96
90-13 Slim's Meadow	83	45	116	93	0

Table 8: Commercial grazing and stock nights in the ten areas receiving the most commercial use in 2011. Previous use provided for reference. Shown as: grazing nights (nights supplemental feed)|total stock nights.

Area	2011 N/W	2010 N	2009 N/D	2008 D	2007 W
84-2 Lower Rock Ck Xing Mdw	26(237)|263	148(90)|238	56(96)|152	195(42)|237	47(47)|94
42-1 Dusy Creek	16(188)|204	28	3	12	0
83-5 Lower Crabtree Meadows	57(131)|188	66(20)|86	0	0(5)|5	69(9)|78
71-1 Austin Camp Meadows	130(6)|136	0	0	0	0
69-5.2 Grasshopper Meadow	110	0	0	0	0
90-9 Lower South Fork Meadow	108	61(36)|97	0(60)|60	0	12
58-2 Woods Creek Crossing	106	39	9	66(6)|72	42
79-1 Cold Springs Camp Area	100	0	43	0	0
66-3 Junction Meadow (Bubbs)	66(9)|75	45(37)|82	61(36)|97	41(47)|88	63
65-4 Upper Bubbs Creek	51(23)|74	39	75	57	227

Table 9: Private grazing and stock nights in the ten areas receiving the most private use in 2011. Previous years use included for reference. Shown as: grazing nights (nights supplemental feed)|total stock nights.

Area	2011 N/W	2010 N	2009 N/D	2008 D	2007 W
71-1 Austin Camp Meadows	84	45	34	21	0
72-8 Sugarloaf Meadow	67	38	49	46	91
83-7 Lower Whitney Creek	54	30(20)|50	9	12	0
33-1 Evolution Meadow	28	12	14	0	0
69-5.1 Scaffold Mdw	26	22	18	32(10)|42	12
71-3 Ranger Meadow	22	0	95	20	16
70-4 Cement Table Meadow	18	20	10	0	12
70 Zone 70 unspecified location	10	0	0	0	0
71-2 Grave Meadow	10	0	0	14	0
84-2 Lower Rock Ck Xing Mdw	0(8)|8	6	50	8	3

Type of stock. Horses and mules continued to be the most used stock animals in the park, with over 98% of the stock nights (Table 10). Burro and llama use was lower than historic averages, comprising less than 2% of all stock use.

Table 10: Use by type of stock, 1997-2011

Year	Horse/mule	Burro	Llama
2011 N/W	5365	5	84
2010 N	6900	224	38
2009 N	7407	212	61
2008 N/D	6544	210	103
2007 D	5885	468	75
2006 W	5424	410	33
2005 N	6973	140	42
2004 D	6770	615	123
2003 N/D	7348	746	124
2002 N/D	8135	766	120
2001 N	8222	162	115
2000 N	6376	500	95
1999 N	7709	189	247
1998 W	4572	143	261
1997 N	8372	141	461
Mean	**6800**	**329**	**132**

Discussion

Use patterns. An above average winter snowpack and cool spring temperatures were the primary drivers of stock use patterns in 2011. May snowpack measurements ranged from 144% to 164% of average. Ordinarily, this would result in 2011 being categorized as a “wet” year for purposes of setting preliminary opening dates in the Kaweah drainage and as a "normal" year in the Kings and Kern drainages. However, the lessons learned in 2010 (which also had very late spring snow melt and delayed opening dates despite being categorized as a “normal” year) were applied in 2011 by adopting “wet” year default grazing opening dates. In addition, there was increased emphasis on early evaluation of meadow conditions and communication of these conditions to stock users.

As in 2010, moisture conditions resulted in grazing opening date delays. Delays in grazing opening dates beyond the “wet” year defaults were made for 76 areas, with an average of roughly two weeks. A few meadows stayed closed until September 1, and were therefore closed to grazing through two of the three busiest months of the season. Use patterns were also affected by snow on high passes. The first stock trips over Kearsarge and Bishop Passes were in the second week of August, while trips over Cottonwood Pass began the third week in July. The first crossings of Glen and Forester Pass didn’t occur until the end of August, and no parties with horses and mules crossed Muir Pass in 2011.

Reported stock use during the summer of 2011 totaled 5438 stock nights, or 6745 animal unit nights. This represents a decrease of 24% compared to 2010, and is 65% of the 27-year average of 8321 stock nights. This decrease in use is likely due to delayed access to the wilderness due to snow covered passes and late grazing opening dates due to wet conditions. The decrease is similar in magnitude to the wet years of 2006, 1998, 1995, and 1993. For context, 2011 was the third lowest year for total stock use on record; only the summers following El Niño winters in 1995 and 1998 had lower reported use. The delay in access and grazing opening dates was also reflected in higher proportions of use later in the season (August and September) than average.

However, the impact of late grazing opening dates was buffered by an increase in the use of supplemental feed. A total of 1277 nights of supplemental feed were reported in 2011, compared with 814 in 2010: an increase of 57%. This year marked the highest level of supplemental feed use since data collection began in 1997. Administrative use of supplemental feed was higher than in past years; 323 nights representing approximately 12% of overall administrative stock use. Many of the early season trail crew resupplies were accomplished by day trips therefore avoiding the need to graze or feed, although relatively drier conditions allowed the Sequoia trail crew to graze stock in the Kern River drainage beginning in the middle of June. Commercial users had the highest absolute and relative use of feed with 912 nights representing 39% of all commercial use. Private users fed supplements for 35 stock nights, about 8% of all private use.

As has been the case since 2008, administrative stock use was greater than either commercial or private use (Appendix 2). In 2011, administrative use accounted for 50% of all overnight stock use, the highest proportion of use since record keeping was standardized in 1985. However, absolute administrative use decreased by 22% over the previous year. Absolute administrative use appears to be relatively stable from 1985 to 2011, with an average of 2808 nights. As in past years, trail maintenance accounts for the greatest amount of administrative use: the Sequoia and Kings Canyon trail crews ranked 1st and 3rd in total stock nights among all administrative, commercial, and private users in 2011. It should be noted that trail crew numbers also include stock nights used to mobilize and demobilize wilderness ranger stations. Reported stock use by ranger staff decreased by 28%, from 511 nights in 2010 to 369 nights in 2011. This decrease was largely due to the Hockett ranger station being intermittently staffed and the Roaring River ranger mobilizing later than usual. No Military Overflight trip was taken in 2011, although frontcountry ranger staff and the Leadership Team did make stock trips into both Kings Canyon and Sequoia.

In addition to stock use by NPS staff, 364 of the commercial stock nights reported in 2011 were attributed to administrative functions such as supplying NPS trail or resource crews and evacuating sick or injured visitors. This represents 16% of all reported commercial use in 2011 and an increase over the 15 year average of 106 stock nights. Most of the commercially provided administrative use relied on supplemental feed (237 of the 364 nights). The LeConte Ranger Station replacement project accounts for 192 of the 364 nights. The NPS contracted with Rainbow Pack Station to bring materials into LeConte and stipulated that supplemental feed would be used in lieu of grazing. These stock mostly overnighted at 42-1 Dusy Creek. This year's use numbers are influenced by this single project, but may also reflect an increasing trend in commercially provided administrative stock use, or increased effort to document this kind of use.

Total commercial use decreased relative to 2010 by about 26%. Two authorized commercial outfitters had no reported use in the two parks, while two others reported only day use

in the parks. There were equal numbers of packers reporting increases and decreases in overnight use in 2011 relative to 2010. The snowy passes limited the number of long travelling trips on the John Muir Trail, and were reflected in lower use numbers for commercial outfitters that typically service these trips, such as the Rock Creek and High Sierra Pack Stations. The largest decrease in reported use came from Rock Creek Pack Station, which reported a decrease of 53% from the 1424 nights reported in 2010. The most notable increase was a 135% increase from 2010 reported by Horse Corral Pack Station.

Reported private use decreased by 25% relative to 2010, and also likely reflects a late start to the season. However, the decrease in 2011 may be superimposed on a longer-term trend of decreasing private use (both absolute use and as a percentage of total use) from 1985 to 2011.

Given that administrative and commercial use accounts for more than 90% of total stock use, the destinations of these user groups tend to drive overall use patterns. In general, administrative and commercial users stay in different areas, thereby dispersing use. In 2011, administrative packers reported stays at an above average number of different locations, while commercial and private users stayed at fewer different areas than average. Between all user groups, there were 96 different areas with reported use in 2011, which is below the 15 year average of 104.

Administrative use in 2011 was focused on meadows adjacent to stock supported ranger stations and those areas serving as foci for trail crews. In Sequoia, heavily used meadows used primarily by the trail crews include 86-7 Lewis Camp Large Pasture, 86-1 Kern Bridge Camp, 79-1 Cold Springs Camp Area, 83-8 Sandy Meadow, and 77-5 Redwood Meadow. With the exception of 77-7 Redwood Meadow, these stock nights were predominantly grazing nights. In Kings Canyon, administrative use was heaviest at 69-5.1 Scaffold Meadow Tourist Pasture, as both the wilderness ranger and packers supporting the CCC trail crew in Cloud Canyon grazed this meadow.

Commercial use in 2011 was heaviest in the Rock Creek and Whitney Creek drainages which were accessible to stock earlier than many other destinations accessed from the east side trailheads. Meadows with heavy reported commercial use include 84-2 Lower Rock Creek Crossing and 83-5 Lower Crabtree Meadow. However, a large proportion of nights at these locations relied on supplemental feed, as wet conditions delayed grazing opening dates. In Kings Canyon, there was heavy commercial use to bring construction materials into the LeConte ranger station; stock were tied and fed at the camp at 42-1 Dusy Creek. Other Kings Canyon meadows receiving heavy commercial use were 58-2 Woods Creek Crossing and two meadows in the Roaring River area: 71-1 Austin Camp Meadows and 69-5.2 Grasshopper Meadow.

Private use was greatest in the Roaring River drainage. Absolute use numbers were small, with the heaviest use at 71-1 Austin Camp Meadows, 72-8 Sugarloaf Meadow, 69-5.1 Scaffold Meadow Tourist Pasture, 70-4 Cement Table Meadow, 71-2 Grave Meadow, and 71-3 Ranger Meadow. Outside of the Roaring River drainage, there was private use at 83-7 Lower Whitney Creek, 33-1 Evolution Meadow, and 84-2 Lower Rock Creek Crossing Meadow. Notably absent was any reported private use on the Hockett Plateau.

Four of the ten meadows most heavily used by all groups had relatively little grazing, with users holding and feeding stock. Use in three of these meadows was primarily commercial (84-2 Lower Rock Creek Crossing Mdw, 42-1 Dusy Creek, and 83-5 Lower Crabtree Meadows) while only administrative use occurred at the fourth (77-7 Redwood Meadow). The meadow with the

heaviest use overall (69-5.1 Scaffold Meadow Tourist Pasture) was grazed by multiple parties from each user group, administrative, commercial, and private. Use by both commercial and private parties contributed to high levels of use at 71-1 Austin Camp Meadows.

Notable increases in use relative to 2010 were seen in the following areas:

Kings Canyon

38-2 Blue Canyon Meadow
42-1 Dusy Creek
67-1 East Lake Meadow
69-4 Lackey Pasture
69-5.2 Grasshopper Meadow
71-1 Austin Camp Meadows
72-8 Sugarloaf Meadow

Sequoia

77-5 Redwood Meadow
79-1 Cold Springs Camp Area
83-5 Lower Crabtree Meadows
83-7 Lower Whitney Creek
86-2 Upper Funston Meadow
90-13 Slim's Meadow
90-5.2 Hockett Pasture

Horses and mules remained the primary type of stock used, accounting for over 98% of total use. Llama use increased relative to 2010 but was lower than average, accounting for just 0.4% of total use. Reported burro use decreased to the lowest level on record as Three-Corner-Round, historically a primary user of burros, did not report any use in the parks. Two parties making long-distance trips with llamas accounted for the majority of llama use; both parties rented the llamas from Potato Ranch in Sonora, CA.

Reporting and data management. While commercial and administrative reporting has continued to improve in timeliness and quality, there has been little improvement in the number of self-reporting cards returned by private users. We continued to see low compliance with the reporting requirement by private users, despite an increased effort by trailhead rangers to distribute these cards within the parks, and by wilderness rangers to give the cards to visitors beginning their trips outside of the parks.

The failure to self-report use may be part of a larger issue of stock users entering the parks from the east not receiving accurate information about grazing regulations and reporting requirements. This means that data for private users are less accurate and less complete than for other classes of use. This manifests itself as imprecise grazing locations, as total use nights are still recorded from permits and observation logs. For this reason, we continue to rely on ranger observation logs and permit databases to capture private stock use and validate self-reported commercial use. An example of the importance of wilderness ranger observations came from the Hockett Plateau, where reported 2011 use for 90-10 South Fork Meadow was far below actual use based on site visits and residual biomass monitoring, and where there was no use reported for 90-11 South Fork Pasture despite clear evidence of grazing observed by plant ecology staff in September. With intermittent staffing of the Hockett ranger station, use was only partially documented.

Improving training for both NPS and USFS trailhead personnel was a priority in 2011, with dedicated training for trailhead personnel given in May of 2011 in order to improve the information being provided by permit issuers. This appears to have increased the number of permits that were annotated with key information, such as type of user, before being provided to the plant ecology office.

Continued strict enforcement of the monthly reporting requirement of both day and overnight use by commercial packers is critical. Due to the efforts of the concessions office in 2011, monthly reports allowed us to better track stock use patterns overall, and streamlined the process of winnowing through the permit database at the end of the season. Having monthly reports in hand for key areas enables us to make informed decisions regarding the need for grazing restrictions mid-season.

In addition to the trails supervisors entering much of the administrative use during the season, 3 pay periods of support during the fall months allowed plant ecology staff to enter and process the stock use and residual biomass monitoring data in a timely manner.

As this report relies on diverse sources of data, and as the authors are certainly not immune to the making of errors, please submit corrections or comments regarding any questionable portions of this report. If you are aware of use that has not been captured, or if it appears that use has been either under- or over-reported, please do not hesitate to bring it to our attention. Even if it is not possible to determine the correct number, it is helpful to annotate areas of uncertainty wherever they occur. We will endeavor to update the stock use database as corrections are submitted; note that this practice results in variations in the totals from one year to the next as additional data become available. Therefore, this report supersedes all previous stock use reports from Sequoia and Kings Canyon National Parks, as additional data are acquired and errors are corrected.

Acknowledgements. We wish to thank all of the stock users who took the time to send in their reporting forms this year, and also the wilderness and trailhead rangers who kept track of stock use nights in their areas. We also wish to recognize the additional effort made by trailhead rangers to annotate permits for us, and by the wilderness office staff who set aside pack stock related permits and shared the output of the wilderness permit database. Monica Rinne tenaciously pursued truant CUA reports, as well as scanning and distributing them, a task that is deeply appreciated. Corie Cann entered the use data and also helped track down missing reports. Gregg Fauth, David Karplus, and Monica Rinne provided helpful reviews of this report. Funding for the seasonal meadow monitoring position was again provided in part by CUA cost recovery fees. We continue to owe a debt of gratitude to David Karplus and Tyler Johnson, trails supervisors, for entering administrative stock use records directly into a database, saving the plant ecology staff many hours of work.

Appendix 1: Reporting forms

Samples of stock use reporting forms used during 2011; the small card is distributed to private parties with their wilderness permit, and is stamped and addressed for ease of return.

Back:

STOCK USE REPORTING CARD ***Sequoia and Kings Canyon National Parks***

Please circle one: Horses/mules Burros Llamas

Please circle one: Commercial Packer Private Party NPS Stock

Date	Forage Area Used That Night (name of meadow, camp, etc.)	Forage Area #	# of stock	# of nights	# of people

Form completed by (please print):_____Date: _____

Address:_____Phone: _____

One location per line. Please be specific in naming forage areas. Please return by Oct. 31.

Front:

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
SEQUOIA AND KINGS CANYON NATIONAL PARKS
47050 GENERALS HIGHWAY
THREE RIVERS, CALIFORNIA 93271

AN EQUAL OPPORTUNITY EMPLOYER

_____
Official Business
Penalty For Private Use $300

Wilderness Office
Sequoia and Kings Cyn National Parks
47050 Generals Highway
Three Rivers, CA 93271

2011 Commercial Pack and Saddle Stock Use Report
Sequoia and Kings Canyon National Parks

Note: this form replaces the previous Overnight Stock Use Report for Commercial Pack Stations and Incidental Business Permit Holders, and includes *all* packstock use whether or not grazing occurs. Please return on a monthly basis to: Concessions Office, Sequoia and Kings Canyon National Parks, Three Rivers CA 93271 by the tenth of the month; e.g. report all July use by August 10.

Trip #	Date	Name of Client	Type of Trip*	# Clients	# Packers	# Saddle Stock	# Pack Stock	Destination/ Meadow Area Grazed	Meadow ID# (if overnight)	# nights at this location	Grazed? (Y/N)	Notes (pellets fed, trail conditions, etc.)
1	8/2	*Example*--Smith	S in	3	1	4	4	Upper Rock Creek	--	0	N	
2	8/5	*Example*--Smith	S out	3	1	4	2	Upper Rock Creek	--	0	N	
3	8/10	*Example*--Jones	T	4	1	5	4	Nathan's Meadow	85-10	1	N	Pellets fed
	8/11	*Example*--Jones	T	4	1	5	4	Upper Crabtree Meadow	83-4	2	Y	
	8/13	*Example*--Jones	T	4	1	5	4	Rock Creek Lake Meadow	85-8	1	Y	
4	8/15	*Example*--White	D in	7	1	0	4	Upper Kearsarge	--	0	N	Drop only; no pickup

D In – Dunnage In
D Out – Dunnage Out
Dunnage trips : Dunnage is delivered and/or picked up; clients are on foot. Includes resupply trips

S In – Spot In
S Out – Spot Out
Spot trips: Clients and their dunnage are delivered and/or picked up; clients are on horseback

T – Travel Trip
Clients and packers travel together for the duration of the trip

Appendix 2: Stock use at Sequoia and Kings Canyon National Parks, 1985-2011

The letter next to the year indicates the type of snowpack year it was: w=wet, n=normal, d=dry. Stock Nights refer to an overnight stay by an animal regardless of type. Animal Unit Months (AUM's) are calculated by dividing the number of days in a month (30) into the number of animal unit nights (see methods section for definition).

	Administrative			Commercial			Private			Total	
Year & Moisture	Stock Nights	%	AUM	Stock Nights	%	AUM	Stock Nights	%	AUM	Stock Nights	AUM
2011 N/W	2706	50%	90.2	2310	42%	77	422	8%	14.1	5438	181
2010 N	3482	49%	116	3117	44%	22.3	563	8%	18.8	7162	239
2009 N	3673	48%	122	3126	41%	33.7	881	11%	29.4	7680	256
2008 N/D	3132	46%	104	3090	45%	23.4	635	9%	21.2	6857	229
2007 D	2761	43%	92	3171	49%	18.2	496	8%	16.5	6428	214
2006 W	1839	31%	61.3	3079	52%	35.3	949	16%	31.6	5867	196
2005 N	2379	33%	79.3	4098	57%	18.6	678	9%	22.6	7155	239
2004 D	3175	42%	106	3287	44%	36.9	1046	14%	34.9	7508	250
2003 N/D	3099	38%	103	3674	45%	52	1445	18%	48.2	8218	274
2002 N/D	3463	38%	115	3894	43%	59.2	1664	18%	55.5	9021	301
2001 N	3596	42%	120	3800	45%	41.4	1103	13%	36.8	8499	283
2000 N	3261	47%	109	2648	38%	41.1	1062	15%	35.4	6971	232
1999 N	3339	41%	111	3812	47%	40.6	994	12%	33.1	8145	272
1998 W	2141	43%	71.4	1806	36%	41	1029	21%	34.3	4976	166
1997 N	2430	27%	81	3664	41%	92.6	2880	32%	96	8974	299
1996 N	2146	32%	71.5	3612	54%	39.8	955	14%	31.8	6713	224
1995 W	1142	21%	38.1	2772	51%	60.1	1477	27%	49.2	5391	180
1994 D	2431	26%	81	5268	56%	69.7	1731	18%	57.7	9430	314
1993 W	2216	28%	73.9	4259	54%	50.9	1343	17%	44.8	7818	261
1992 D	3007	27%	100	6112	55%	78.5	1976	18%	65.9	11095	370
1991 N	2842	25%	94.7	6795	61%	61.4	1547	14%	51.6	11184	373
1990 D	3034	24%	101	7999	62%	70.9	1862	14%	62.1	12895	430
1989 D	3926	32%	131	6896	56%	63.9	1539	12%	51.3	12361	412
1988 N	3043	25%	101	7459	61%	67.5	1652	14%	55.1	12154	405
1987 D	3204	31%	107	4857	46%	99.1	2402	23%	80.1	10463	349
1986 W	2833	35%	94.4	3424	42%	76.4	1865	23%	62.2	8122	271
1985 N	1531	19%	51	4621	57%	82.4	1984	24%	66.1	8136	271

Appendix 3: Overnight stock use in named forage areas, 2007-2011

Data for 1985-2011 are available upon request. These data do not include use where a specific named meadow could not be identified.

Values are in stock nights: Administrative grazed—Commercial grazed—Private grazed | Total nights grazed (Total nights of supplemental feed all users).

Forage Area	2011 N/W	2010 N	2009 N	2008 N/D	2007 D
28-1 Piute Crk	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
28-2 Aspen Mdw	0-0-0|0	0-10-0|10	0-0-2|2	0-3-0|3	0-0-0|0
28-3 Cony Camp	0-4-0|4	0-0-0|0	0-0-0|0(30)	0-17-0|17(37)	0-36-0|36(44)
28-4 Franklin-Montgomery Mdw	10-0-0|10	0-0-0|0(33)	0-0-0|0	117-7-0|124(16)	143-7-0|150
28-6 Hell-For-Sure Jct Mdws	0-0-0|0	0-0-0|0	0-10-0|10	0-8-0|8	0-8-0|8
28-7 Upper Goddard Cyn	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-11|11
33-1 Evolution Mdw	0-3-28|31(3)	0-167-12|179(12)	0-51-14|65	0-32-0|32	0-102-0|102
33-2 McClure Mdw	0-4-0|4	0-0-0|0(29)	7-54-2|63	16-58-0|74(1)	18-0-5|23
33-3 Colby Mdw	0-0-0|0	0-99-8|107	0-0-0|0	0-136-0|136(10)	0-62-0|62
33-4 Darwin Mdw	0-0-0|0	0-0-0|0	0-24-6|30	0-67-0|67	0-95-0|95
33-4.1 Upper Colby Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
33-4.2 Darwin Pocket Mdws	0-0-0|0	0-18-0|18	0-0-0|0	0-0-0|0	0-0-0|0
33-4.3 Darwin Mdw Proper	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
33-6 Darwin Bench	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
33-8 McGee Cyn	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
33-9 Emerald Lakes	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
34-1 Evolution Lake	0-0-0|0(3)	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0(12)
34-2 Sapphire Lake	0-0-0|0	0-0-0|0	0-0-0|0	0-8-0|8	0-0-0|0
38-1 Upper Blue Cyn	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
38-2 Blue Cyn Mdw	84-4-0|88	0-11-0|11	0-0-0|0(28)	0-0-0|0	18-12-0|30
38-3 Lower Blue Cyn	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
39-1 Upper LeConte Cyn	0-0-0|0	0-0-3|3(29)	0-0-6|6	0-0-0|0	0-0-0|0
39-2 Big Pete Mdw	0-4-0|4	0-0-0|0	116-68-10|194	106-81-0|187	0-103-0|103
39-3 Little Pete Mdw	0-0-0|0	0-32-0|32	0-39-6|45	14-70-0|84	0-40-13|53

Values are in stock nights: Administrative grazed—Commercial grazed—Private grazed | Total nights grazed (Total nights of supplemental feed all users).

Forage Area	2011 N/W	2010 N	2009 N	2008 N/D	2007 D
39-4 Ladder Camp	15-41-0|56(9)	0-117-0|117	0-55-0|55	0-16-0|16	0-49-0|49
39-5 Grouse Mdw	0-0-0|0	0-0-12|12	0-0-0|0	0-38-0|38	90-29-3|122
39-6 Palisade Crk Junction	0-0-0|0	0-0-0|0	0-6-0|6	0-0-0|0	0-9-0|9
39-7 Stillwater Mdw	0-0-6|6	36-5-0|41	0-0-0|0	0-0-0|0	0-0-0|0
39-8 Deer Mdw	75-0-4|79(3)	0-63-6|69	14-9-0|23	4-22-0|26	0-6-0|6
42-1 Dusy Crk	0-16-3|19(188)	0-28-0|28	0-3-0|3	0-12-0|12	0-0-0|0
42-2 Lower Dusy Basin	0-0-0|0	0-0-0|0(92)	0-12-0|12	0-0-4|4	0-0-0|0(22)
42-3 Upper Dusy Basin	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0(14)
42-4 Rainbow Lakes	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
45-1 Palisade Lakes	0-0-6|6	0-46-0|46	0-9-0|9	0-5-0|5	0-62-7|69(6)
46-1 Upper Basin Mdws	0-21-0|21	0-5-0|5(3)	0-0-0|0	0-41-0|41	0-92-0|92
46-2 South Fork Kings River	0-6-3|9	41-164-6|211	14-27-0|41	8-13-0|21	32-22-8|62
46-3 Bench Lake/JMT Jct.	0-7-2|9	0-21-3|24	0-0-0|0	0-0-0|0	18-63-6|87
46-4 Bench Lake	0-0-0|0	0-0-0|0	0-7-0|7	0-0-0|0	0-0-0|0
46-5 Taboose Pass Area	0-0-0|0	0-0-0|0	0-12-0|12	0-31-0|31	0-60-0|60
46-6 Lake Marjorie	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
47-1 Cartridge Crk	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
47-3 Marion Lake	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
47-7 Kid Crk	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
47-8 Muro Blanco	0-0-0|0	178-3-0|181	0-0-0|0	0-0-0|0	0-0-0|0
51-1 Simpson Mdw	0-10-0|10	19-95-0|114	173-0-0|173	141-0-0|141	91-119-0|210
51-2 Tehipite Valley	0-5-0|5	24-0-0|24(6)	0-0-0|0(34)	0-4-0|4	0-0-0|0
51-3 Gnat Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
51-4 Hay Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
52-1 Volcanic Lakes Basin	0-0-0|0	0-10-0|10(15)	0-19-0|19	0-12-0|12	0-0-0|0
52-2 Kennedy Cyn Mdws	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
52-3 Upper Kennedy Cyn Mdws	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
52-4 Kennedy Pass Mdws	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0

Values are in stock nights: Administrative grazed—Commercial grazed—Private grazed | Total nights grazed (Total nights of supplemental feed all users).

Forage Area	2011 N/W	2010 N	2009 N	2008 N/D	2007 D
52-6 Frypan Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
52-9 Big Camp Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
53-1 Horseshoe Mdws	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
53-3 State Lakes Area	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0(5)	0-0-0|0
53-4 Dougherty Crk	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
53-4.1 Dougherty Mdws	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0(26)
53-4.2 Glacier Valley Mdws	12-10-0|22	0-0-0|0	0-10-0|10	19-26-0|45	0-0-0|0
53-5 Fallen Moon Mdw	17-0-0|17	0-16-0|16(7)	0-0-0|0	0-0-0|0	0-0-0|0
53-6 Volcanic Trail Junction	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
53-7 Shorty's Mdw	0-0-0|0(24)	2-58-0|60	0-68-0|68	0-16-0|16	0-65-0|65
53-8 Granite Pass Mdws	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
54-1 Granite Lake	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0(10)	0-0-0|0
54-2 Granite Basin Mdws	6-12-0|18	0-36.5-4|40.5	0-7-0|7	0-43-0|43	9-27-10|46
54-3 Grouse Lake	0-0-0|0	0-0-0|0	0-0-0|0	0-4-0|4	0-0-6|6
54-4 Halfmoon Mdw	0-0-0|0	0-31.5-0|31.5	0-15-0|15	6-0-0|6	0-0-0|0
54-5.1 Lower Tent Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
55-1 Woods Crk Jct Mdw	0-0-0|0	0-0-0|0	26-0-0|26(18)	16-6-0|22	7-0-0|7
55-2 U. Paradise Valley Mdw	0-0-3|3	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0(1)
55-3 L. Paradise Valley Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
56-1 Mdws S. of Pinchot Pass	0-0-3|3	0-86-0|86	0-0-0|0	0-54-0|54	0-90-0|90
56-2 Twin Lakes Area	16-0-0|16	0-26-0|26	0-9-0|9	0-39-0|39	0-41-0|41
56-3 White Fork Camp	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	5-11-0|16(3)
57-1 Woods Lake Mdws	13-0-0|13	0-7-0|7	0-30-0|30	0-14-0|14	0-96-0|96
58-1 Castle Domes Mdw	21-0-3|24	38-4-10|52(8)	0-42-8|50(16)	13-81-0|94(105)	12-61-0|73
58-2 Woods Crk Crossing	36-106-5|147(6)	93-39-6|138(6)	0-9-0|9	0-66-0|66(19)	63-42-2|107(18)
58-3 Baxter Crk Drift Fence Mdw	0-16-0|16	0-92-0|92	0-13-0|13	0-53-0|53	0-50-6|56
59-1 Baxter Crk	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
61-1 Cotter Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0

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Forage Area	2011 N/W	2010 N	2009 N	2008 N/D	2007 D
61-2 Fjord Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
61-3 Lower 60 Lakes Basin Mdws	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
62-1 Rae Lakes Basin Mdws	0-0-3|3(17)	0-0-5|5	0-0-0|0	0-0-0|0(19)	0-0-5|5(13)
62-1.1 Dollar Lake	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
62-2 Dragon Lake Mdw	0-0-0|0(5)	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
63-1 Charlotte Crk Mdws	0-36-0|36	0-51-0|51	78-28-0|106(16)	18-25-0|43(21)	143-43-1|187
63-2 Charlotte Lake Lower Mdw	0-0-0|0(9)	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
63-3 Charlotte Lake Upper Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
64-1 Kearsarge Basin Mdws	0-0-2|2	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0(51)
64-2 Bullfrog Lake Mdws	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
65-1 Vidette Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-2|2	0-0-0|0
65-2 East Vidette Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
65-3 Upper Vidette Mdws	0-0-0|0(6)	0-0-0|0	0-6-0|6	0-0-0|0(15)	0-0-0|0
65-4 Upper Bubbs Crk	17-51-0|68(23)	65-39-6|110	137-75-14|226(44)	0-57-2|59	0-227-6|233
65-5 Center Basin	0-0-0|0	0-0-0|0	0-18-0|18	0-13-0|13	0-0-0|0
66-1.1 Sphinx Crk Junction	0-0-0|0(30)	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
66-1.2 Angleworm Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
66-2 Charlotte Crk Confluence	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
66-3 Junction Mdw (Bubbs)	0-66-6|72(9)	0-45-10|55(40)	17-61-0|78(36)	0-41-0|41(47)	0-63-0|63(11)
67-1 East Lake Mdw	0-64-0|64	0-23-0|23	0-81-0|81	0-14-18|32	0-168-0|168
67-2 Ouzel Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
67-3 Reflection Lake	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
68-1 Sphinx Crk Crossing	0-0-0|0(10)	0-14-0|14	0-0-0|0	0-0-0|0	0-0-0|0
69-2 West Side Roaring River	53-0-0|53	49-0-0|49	73-0-5|78	58-0-30|88	54-0-0|54
69-3 JR Pasture	60-0-0|60	59-0-0|59(4)	43-0-8|51	85-3-2|90	24-0-0|24(10)
69-4 Lackey Pasture	68-0-0|68	26-0-16|42	29-0-0|29	18-6-2|26	60-0-0|60
69-5.1 Scaffold Mdw Tourist Past.	358-52-26|436(12)	290-24-22|336(8)	245-137-18|400	195-53-32|280(10)	224-36-12|272(5)
69-5.2 Grasshopper Mdw	0-110-0|110	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0

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Forage Area	2011 N/W	2010 N	2009 N	2008 N/D	2007 D
69-6.1 Moraine Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
70-1.1 Grasshopper Camp	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
70-1.2 Brewer Stringers	0-0-0|0	0-28-0|28(7)	0-0-0|0	0-0-0|0	0-0-0|0
70-3 False Cement Table Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
70-4 Cement Table Mdw	0-0-18|18	24-0-20|44(4)	0-8-10|18	0-0-0|0	0-0-12|12
70-5 Big Wet Mdw	0-0-0|0	0-0-0|0	0-64-30|94	0-136-60|196	0-24-0|24
70-6 Grand Palace Hotel	2-0-0|2	0-0-0|0	26-0-10|36	5-2-0|7	9-0-0|9
70-7 Colby Lake	0-0-0|0	0-0-0|0	3-0-0|3	0-0-0|0	0-0-0|0
71-1 Austin Camp Mdws	0-130-84|214(6)	0-0-45|45	0-0-34|34	0-0-21|21	0-0-0|0
71-2 Grave Mdw	0-0-10|10	0-132-0|132	0-39-0|39	0-0-14|14	0-20-0|20
71-3 Ranger Mdw	0-0-22|22	27-0-0|27	76-65-95|236	0-130-20|150	9-0-16|25
71-4 Upper Ranger Mdw	0-0-0|0	0-0-0|0	13-0-0|13	0-0-0|0(5)	0-70-0|70
71-5 Upper Deadman Cyn	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
72-2 Catch'em Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
72-3 Willow Mdw (Sugarloaf Crk)	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
72-4 Mitchell Mdws (Sheep Crk)	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
72-6 Williams Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
72-7 Comanche Mdw	0-0-0|0	0-0-0|0	0-0-0|0(2)	0-0-0|0(4)	0-0-0|0
72-8 Sugarloaf Mdw	5-12-67|84(5)	10-5-38|53	5-16-49|70	5-17-46|68(5)	0-14-91|105
72-9 Little Sugarloaf Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
72-10 Sugarloaf Crk Camp	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
72-13.2 Crowley Cyn	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
72-14 Box Cyn	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
72-15 Ellis Mdw Area	0-0-0|0(5)	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
72-16 Paradise Mdw Area	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
72-17 West Fork Ferguson Ck	0-0-0|0	0-0-0|0	0-16-0|16	0-0-0|0	0-0-0|0
72-17.5 Sheep Pen Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
72-18 Ferguson Mdw	0-0-0|0	0-0-0|0	0-0-16|16	0-0-0|0	0-0-0|0

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Forage Area	2011 N/W	2010 N	2009 N	2008 N/D	2007 D
72-19 Long Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
73-1 Sheep Camp Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-37-0|37	0-0-0|0
73-2 Seville Lake	0-0-0|0	0-0-14|14	0-0-0|0(34)	0-0-0|0(10)	0-0-0|0
73-3 Lovelace Cabin Mdw	0-0-0|0(10)	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
73-4 Lost Lake	0-0-0|0(16)	0-0-0|0	0-0-6|6(18)	0-0-0|0(10)	0-0-0|0
73-5 Ranger & Beville Lakes	0-0-0|0	0-0-0|0	5-0-0|5(4)	0-0-0|0	0-0-0|0(5)
74-1 Twin Lakes	0-0-0|0	0-0-0|0	0-0-0|0	0-5-0|5	0-0-0|0
74-3 Clover Crk	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
75-1 Lone Pine Mdws	0-0-0|0	11-0-0|11	21-0-0|21	0-0-0|0	0-0-0|0
75-2 Tamarack Lake	0-36-0|36	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
76-2 Pear Lake	0-0-0|0	0-0-0|0	0-0-0|0(5)	0-0-0|0	0-0-0|0
77-1 Bearpaw Mdw	0-0-0|0(6)	0-0-0|0	0-0-4|4(19)	0-0-0|0	0-0-0|0
77-2 Little Bearpaw Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
77-3 River Valley	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
77-4 Granite Ck, Strawberry Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
77-5 Redwood Mdw	12-0-0|12(211)	0-0-0|0(93)	44-6-0|50(146)	112-0-0|112(51)	93-0-0|93(28)
77-6 Cliff Crk	12-0-0|12	0-0-5|5	0-0-0|0	0-0-0|0	0-0-0|0
77-7 Pinto Lake Mdw	3-0-2|5	0-0-0|0	17-35-62|114	0-0-0|0	0-0-0|0
78-1 Hamilton Lakes	0-0-0|0(3)	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
79-1 Cold Springs Camp Area	168-100-0|268	84-0-0|84	169-43-0|212	156-0-0|156	178-0-0|178
79-2 Milestone Basin	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
79-3 Rockslide Lake	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
79-4 Lower Kern-Kaweah River	0-0-0|0	140-0-0|140	0-8-0|8	0-0-0|0	12-0-0|12
79-5 Gallats Lake Mdws	0-0-0|0	28-0-0|28	0-0-0|0	0-13-0|13	108-0-0|108
79-6 Upper Kern-Kaweah River	0-0-0|0	28-0-0|28	0-0-0|0	0-0-0|0	36-0-0|36
80-1 Bighorn Plateau Lake Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
80-2 Tyndall Ck/JMT Frog Ponds	0-0-0|0	0-0-0|0	0-32-0|32	0-0-8|8	0-0-0|0
80-3 Tyndall Crk Mdws	84-24-0|108	14-52-12|78	0-76-0|76	26-62-0|88	96-65-6|167

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80-4 Sheep Camp Mdws	0-0-0|0	0-0-0|0	0-39-0|39	0-4-0|4	0-0-0|0
80-5.1 Lake South America	0-0-0|0	0-0-0|0	0-0-0|0	0-4-12|16	0-0-0|0
80-5.2 Lake S. Americal Col Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
80-6 Kern Headwaters	0-0-0|0	0-0-0|0	0-78-0|78	0-0-0|0	0-0-0|0
81-1 Wright Crk Drainage	0-0-0|0	0-125-0|125	0-121-0|121	0-120-15|135	0-46-0|46
81-2.1 Wallace Ck/JMT Jct Mdw	0-6-0|6	0-6-4|10	0-6-0|6	0-0-2|2	0-0-3|3
81-2.2 Wallace Crk Mdws	0-57-0|57	0-0-0|0	0-36-0|36	0-22-0|22	0-14-0|14
81-2.3 Wallace Ck Waterfall Mdw	0-0-0|0(53)	0-0-0|0	0-0-0|0	0-0-6|6	0-0-6|6
81-2.4 Marshy Mdws	0-0-0|0	0-0-0|0	0-0-0|0	0-0-12|12	0-0-0|0
82-1 Junction Mdw (Kern)	0-25-0|25(16)	0-0-0|0(4)	0-8-0|8(5)	0-0-0|0	0-0-20|20(18)
82-2 One mi. < Junction Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
82-3 Three mi. < Junction Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
83-1 Guitar Lake	0-0-0|0	0-4-0|4	0-0-14|14	0-0-3|3	0-0-3|3
83-3 Crabtree R.S. Mdws	0-0-0|0	0-14-6|20	0-0-0|0	0-0-0|0	0-0-0|0(3)
83-4 Upper Crabtree Mdw	0-0-0|0(46)	0-0-0|0(159)	2-172-0|174(53)	0-188-2|190(19)	12-253-6|271(19)
83-5 Lower Crabtree Mdws	0-57-0|57(137)	0-66-0|66(20)	0-0-0|0	0-0-0|0(5)	0-69-15|84(9)
83-6 Crabtree Lakes Mdws	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0(22)	0-0-0|0
83-7 Lower Whitney Crk	0-67-54|121	0-0-30|30(29)	0-36-9|45	0-0-12|12	0-0-0|0
83-8 Sandy Mdw	182-0-0|182	131-216-0|347	124-117-0|241	224-120-0|344	40-11-0|51
84-1 Rock Crk R.S. Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-3|3
84-2 Lower Rock Ck Xing Mdw	5-26-0|31(245)	112-148-6|266(109)	201-56-50|307(96)	17-195-8|220(42)	42-47-3|92(59)
84-3 Lower Rock Crk Mdws	0-0-0|0	0-0-0|0	0-0-0|0	52-40-0|92	0-0-0|0
84-4 Forgotten Cyn Mdws	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
84-5 Guyot Crk Mdws	0-0-0|0	14-0-0|14	0-0-0|0	0-0-0|0	0-0-0|0
84-6 Siberian Outpost	0-0-6|6	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
85-2 Miter Basin Mdws	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
85-3 Lower Miter Basin Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
85-4 Penned-up Mdw	0-0-0|0	0-0-0|0	0-28-0|28	0-7-0|7	18-58-0|76(1)

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85-5 Upper Soldier Lake Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
85-6 Lower Soldier Lake Mdws	0-0-0|0	0-0-5|5	0-0-7|7	0-11-6|17	0-0-0|0(4)
85-7 New Army Pass Jct Mdws	0-0-0|0(27)	14-0-0|14	0-0-0|0	0-0-3|3	0-0-0|0
85-8 Lower Rock Crk Lk Mdw	0-0-0|0	0-60.8-6|66.8	2-12-6|20	17-0-0|17	0-0-9|9(14)
85-8.1 Rock Crk Lake Mdw	0-0-0|0(38)	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
85-8.2 Rock Crk Lake Stringer	0-0-0|0	0-0-0|0	19-0-0|19	0-0-0|0	0-0-0|0
85-9 Rock Crk Mdw #2	0-0-0|0	0-1.2-0|1.2	0-0-0|0	0-0-0|0	0-0-0|0
85-10 Nathan's Mdw	5-0-0|5	43.5-0-0|43.5(13)	0-118-0|118	0-111-6|117	0-46-0|46
86-1 Kern Bridge Camp	228-8-0|236	534-0-10|544(4)	481-0-12|493	272-0-0|272(3)	183-0-0|183
86-2 Upper Funston Mdw	66-64-0|130	14-0-30|44	0-69-0|69	30-0-24|54	28-6-53|87(6)
86-3 Big Arroyo Confluence	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
86-4 21" Camp, Rattlesnake Crk	0-0-0|0(13)	0-0-0|0	0-19-0|19	0-0-6|6(5)	0-0-0|0
86-5 Lower Funston Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0(11)	0-0-20|20
86-6 Snake Camp, River Pasture	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
86-7 Lewis Camp Large Pasture	260-0-0|260	210-14-0|224	194-0-0|194	115-0-0|115	191-0-0|191
86-8 Kern Station Small Pasture	0-0-0|0(24)	0-7-0|7(5)	0-0-0|0(10)	0-0-0|0(6)	0-0-3|3
87-1 Upper Big Arroyo	0-4-0|4	0-0-0|0	65-0-0|65	75-0-0|75	0-0-0|0
87-2 Little Upper Big Arroyo	0-0-0|0	0-0-0|0	0-0-0|0	75-0-0|75	0-0-0|0
87-3 Big Arroyo Patrol Cabin	60-0-0|60	78-15-12|105	0-55-12|67	75-0-0|75	13-10-0|23
87-4 Lower Big Arroyo	72-0-0|72	91-0-0|91	65-0-0|65	0-0-0|0	0-0-0|0
87-5 Chagoopa Plateau Mdw #1	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
87-6 Chagoopa Plateau Mdw #2	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
87-7 Chagoopa Plateau Mdw #3	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
87-8 Chagoopa Plateau Mdw #4	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
87-9 Chagoopa Plateau Treehouse	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
87-10 Sky Parlor Mdw	6-0-0|6	0-0-5|5	0-38-12|50	0-0-0|0	0-0-0|0
88-1 L. Little 5 Lks (Long Lake)	0-0-0|0(3)	13-0-0|13	0-0-0|0	0-0-0|0	11-0-0|11
88-2 U. Little 5 Lks (R.S. Mdws)	6-0-0|6	0-10-0|10	0-0-0|0	10-0-0|10	0-0-0|0

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Forage Area	2011 N/W	2010 N	2009 N	2008 N/D	2007 D
88-3 Big 5 Lakes Lower Mdw	0-0-0|0	0-0-0|0	0-0-12|12	0-0-0|0	0-0-0|0
88-4 Big 5 Lakes Upper Mdw	0-0-0|0	0-0-10|10(3)	0-0-12|12	0-0-0|0	0-0-0|0
88-5 Big 5 Lakes Upper Stringer	0-0-0|0	0-0-0|0	3-0-0|3	0-0-0|0	0-0-0|0
89-2 Upper Lost Cyn Mdws	76-0-0|76	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
89-3 Lower Lost Cyn Mdws	117-0-0|117	127-0-0|127	101-38-0|139	135-0-0|135	153-0-0|153
89-3.2 Lost Cyn Big Sidehill	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
89-4 Soda Crk Cyn	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
89-5.1 Forester Lake Bench Mdws	8-0-0|8	0-0-0|0	0-0-0|0	0-0-5|5	0-0-0|0
89-5.2 Forester Lake Mdws	0-0-0|0	0-0-0|0	0-0-0|0	0-0-5|5	0-0-0|0
89-5.3 Forester Lake Pocket Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
89-6 Upper Rattlesnake Cyn	0-0-6|6	0-0-0|0	7-55-6|68	0-0-0|0	0-0-0|0
89-7 Shotgun Pass Mdw	0-0-0|0	0-0-0|0	0-0-2|2	0-0-0|0	0-0-0|0
89-8 South Rattlesnake Cyn	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
89-9 Middle Rattlesnake Cyn	0-0-0|0	166-10-0|176	0-0-0|0	0-0-18|18	162-18-0|180
89-10 Cow Camp (Rattlesnake)	0-0-0|0	27-4-5|36	117-0-0|117	273-0-0|273	0-0-0|0
89-12 Crytes Lake	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
89-13 Coyote Crk Mdws	0-0-0|0	0-0-0|0	0-0-0|0	0-0-12|12	0-0-0|0
90-1 Horse Crk Mdws	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
90-3 Evelyn Lake	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
90-4 Cow Camp (Hockett)	0-0-0|0	0-0-0|0	0-0-8|8	0-0-0|0	0-0-4|4
90-5.1 Hockett Mdw	0-0-0|0(16)	202-28-0|230(14)	398-0-29|427	325-0-30|355	122-0-0|122
90-5.2 Hockett Pasture	43-20-0|63	30-0-0|30(10)	73-0-0|73(12)	16-0-0|16	85-0-0|85
90-8 Tuohy Ck/S. Fk Kaweah	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
90-9 Lower South Fork Mdw	0-108-0|108	0-61-25|86(36)	0-0-96|96(60)	0-0-45|45(78)	0-12-0|12
90-10 South Fork Mdw	0-6-0|6(6)	0-61-26|87	0-0-12|12	0-0-10|10	0-75-17|92(60)
90-11 South Fork Pasture	0-0-0|0	0-0-0|0	0-116-54|170(48)	0-200-0|200	0-0-24|24
90-12 Blossom Lake	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
90-13 Slim's Mdw	83-0-0|83	45-0-0|45	116-10-0|126	93-0-20|113	0-0-0|0

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Forage Area	2011 N/W	2010 N	2009 N	2008 N/D	2007 D
90-14 Green Mdw	9-0-0|9	90-0-0|90	0-0-0|0	0-50-6|56	0-0-0|0
90-15 Tuohy Mdws	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
90-16 Summit Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
90-17 Cyclone Mdw	0-0-0|0(14)	0-0-0|0	0-0-0|0(36)	0-0-0|0	0-48-0|48
90-18 Summit Lake Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
90-19 Quinn Mdw	0-0-0|0	23-0-0|23	0-0-0|0	3-0-0|3	6-0-0|6
91-1 Ladybug Camp	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
91-2 Whiskey Log Camp	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
92-1 Monarch Lakes	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
92-2 Crystal Lakes, Cobalt Lake	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
92-3 Franklin Lakes	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
93-1 White Chief Mdw	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
93-2 Eagle Lake	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
93-3 Mosquito Lakes	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
94-1 Mineral Lakes	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0
95-1 Redwood Cyn	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0	0-0-0|0